CLAIMS

What is claimed is:

1. An air spring for a vehicle air suspension system comprising:

a piston attached to a longitudinal member pivotally attached to a chassis component for pivotal movement about an axis; and

an air cell having a first end attached to said piston and a second end attached to said chassis component, said second end having a greater diameter than said first end.

2. The air spring as recited in claim 1, wherein said air cell is tapered between said first end and said second end.

3. The air spring as recited in claim 1, wherein said air cell is of a frustro-conical configuration.

4. An air suspension system for a vehicle comprising:

a longitudinal member pivotally attached to a chassis component for pivotal movement about an axis;

an axle assembly mounted to said longitudinal member; and

an air spring having a frustro-conical air cell and a piston, said air spring disposed between said longitudinal member and said chassis component, said air cell having a first end attached to said piston and a second end attached to said chassis component.

The system as recited in claim 4, wherein said air cell includes an anti-vacuum system and a damper extendable at a rate which allows said anti-vacuum system to equalize a pressure within said air cell with atmospheric pressure as said longitudinal member pivots about said axis away from said chassis component.

6. An air suspension system for a vehicle comprising:

a longitudinal member pivotally attached to a chassis component for pivotal movement about an axis;

an axle assembly mounted to said longitudinal member;

an air spring having a frustro-conical air cell and a piston, said air spring disposed between said longitudinal member and said chassis component, said air cell having a first end attached to said piston and a second end attached to said chassis component;

an anti-vacuum system within said air spring, said anti-vacuum system operable to equalize a pressure within said air cell with atmospheric pressure as said longitudinal member pivots about said axis away from said chassis component; and

a damper disposed between said longitudinal member and the vehicle, said damper extendable at a rate which allows said anti-vacuum system to equalize a pressure within said air cell with atmospheric pressure as said longitudinal member pivots about said axis away from said chassis component.